

Docket No.: 50-388

NOV 14 1984

Mr. Norman W. Curtis  
Vice President  
Engineering and Construction Nuclear  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Dear Mr. Curtis:

Subject: Amendment No. 3 Facility Operating License No. NPF-22 -  
Susquehanna Steam Electric Station, Unit 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 3 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Unit 2. The amendment is in response to your letter dated April 10, 1984. This amendment changes Technical Specifications by modifying the temperature limit for determining the spray pond operable.

A copy of the related safety evaluation supporting Amendment No. 3 to Facility Operating License NPF-22 is enclosed.

Sincerely,

**Original signed by:**

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

Enclosures:

- 1. Amendment No. 3 to NPF-22
- 2. Safety Evaluation

cc w/ enclosures:  
See next page

DISTRIBUTION  
See Attached

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RPerch:dh  
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10/29/84

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OELD  
Goldberg  
10/27/84

11/9/84

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SUSQUEHANNA

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Vice President  
Engineering and Construction  
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Allentown, Pennsylvania 18101

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Office of Attorney General  
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Harrisburg, Pennsylvania 17120

Susquehanna

cc: Governor's Office of State Planning & Development  
Attn: Coordinator, State Clearinghouse  
P O. Box 1323  
Harrisburg, Pennsylvania 17120

Mr. Bruce Thomas, President  
Board of Supervisors  
R. D. #1  
Berwick, Pennsylvania 18603

U. S. Environmental Protection Agency  
Attn: EIS Coordinator  
Region III Office  
Curtis Building  
6th and Walnut Streets  
Philadelphia, Pennsylvania 19106



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

PENNSYLVANIA POWER & LIGHT COMPANY  
ALLEGHENY ELECTRIC COOPERATIVE INC.

DOCKET NO. 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 3  
License No. NPF-22

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:
  - A. The application for an amendment filed by the Pennsylvania Power & Light Company dated April 10, 1984 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the licensee is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-22 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 3, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. PP&L shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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3. This amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

**Original signed by:**

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: NOV 14 1984

LB#2/DL  
RPrech:dh  
10/30/84

LB#2/DL  
EHylton  
10/11/84

LB#2/DL  
ASchwencer  
10/31/84

11/9/84

OELD  
JGoldberg  
10/21/84  
"

ABTD/DL  
TMNovak  
10/17/84

ATTACHMENT TO LICENSE AMENDMENT NO. 3  
FACILITY OPERATING LICENSE NO. NPF-22  
DOCKET NO. 50-388

Replace the following pages of the Appendix "A" Technical Specifications with enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of changes.

REMOVE

3/4 7-3  
3/4 7-4

INSERT

3/4 7-3  
3/4 7-4

PLANT SYSTEMS

EMERGENCY SERVICE WATER SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

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- b. At least once per 18 months by verifying that each pump starts automatically when its associated diesel generator starts.
- c. At least once per 18 months by verifying that each automatic valve properly cycles to its proper position in its required time following receipt of an automatic pump start signal.

## PLANT SYSTEMS

### ULTIMATE HEAT SINK

#### LIMITING CONDITION FOR OPERATION

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3.7.1.3 The spray pond shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, 5, and \*.

ACTION:

- a. With the groundwater level at any spray pond area observation well greater than or equal to 663' Mean Sea Level (MSL), prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the high groundwater level and the plans for restoring the level to within the limit.
- b. With the spray pond otherwise inoperable:
  1. In OPERATIONAL CONDITION 1, 2, or 3, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
  2. In OPERATIONAL CONDITION 4 or 5, declare the RHRSW system and the emergency service water system inoperable and take the ACTION required by Specifications 3.7.1.1 and 3.7.1.2.
  3. In Operational Condition \*, declare the emergency service water system inoperable and take the ACTION required by Specification 3.7.1.2. The provisions of Specification 3.0.3 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.7.1.3 The spray pond shall be determined OPERABLE by verifying:

- a. The average water temperature, which shall be the arithmetical average of the spray pond water temperature at the surface, mid and bottom levels, to be less than or equal to 88°F at least once per 24 hours.
- b. The water level is greater than or equal to 678'1" MSL USGS, at least once per 12 hours.
- c. The groundwater level at observation wells 1, 3, 4, 5, 6, and 1113 to be less than 663' MSL at least once per 31 days.

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\*When handling irradiated fuel in the secondary containment.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION

AMENDMENT NO. 3 TO NPF-22

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

DOCKET NO. 50-388

Introduction

The licensee in a letter dated April 10, 1984, proposed a change to the Technical Specifications of the operating license for Susquehanna Steam Electric Station, Unit 2 which would raise the allowable water temperature in the spray pond from 81°F or less during normal operations to a temperature of 88°F or less during normal operations.

Evaluation

In Section 2.4.4 of the Susquehanna SER Supplement No. 6, the staff concluded that the Susquehanna Ultimate Heat Sink (Spray Pond) complied with Regulatory Guide 1.27 and met the requirements of GDC-44. This conclusion was subject to a technical specification that requires that the water temperature in the spray pond be 81°F or less during normal plant operation. The basis for the 81°F limit was the licensee's conservative analysis had shown that by having the initial pond temperature at 81°F or less, the maximum pond temperature during a design basis accident would be below the design level of 95°F.

Although the licensee proposed the 81°F temperature limit, they recognized at the time that solar heating during the hot summer months might result in a pond temperatures higher than 81°F. Thus the licensee continued their investigation in an effort to find a means by which the temperature limit of 81°F could be increased.

The licensee completed a new analysis of the thermal performance of the spray pond. This new analysis shows that the spray pond can provide sufficient cooling for a design basis accident (LOCA in one unit and a safe shutdown of the other) if the pond operating temperature is limited to 88°F. On the basis of this analysis the licensee requested that the Technical Specification limit of 81°F be increased to 88°F.

This new analysis differs from the original analysis in that the effects of wind have now been taken into consideration. Originally wind effects were ignored. Since winds increase the efficiency of the heat transfer process, ignoring the wind's contribution to heat transfer in the original analysis was a conservative assumption.

The licensee also used meteorological data from the airport near Scranton in the new analysis, instead of the Harrisburg airport data used in the original analysis. The licensee believes that the Scranton data is more

representative of the site than the Harrisburg data because the Scranton airport is only 27 miles from the site while the Harrisburg airport is 70 miles away and separated by a mountain range. The staff agrees that the Scranton airport is a more appropriate source of meteorological data.

Another change from the original analysis involves solar effects on the cooling pond. This change results in a higher solar heat load contribution to the spray pond than in the original analysis.

A fourth difference between the original and the new analysis is the decay heat data. The staff reviewed the new decay heat data submitted by the licensee and found them acceptable with one small modification. Because the new heat loads did not take into account the addition of a fifth diesel generator at the plant, the heat load data points were increased to account for the possibility of the fifth diesel being on line with three of the existing four diesels.

The final change in the licensee's new analysis involves a revision in the emergency service water (ESW) flow rate. This revision reflects the results of a two unit flow balance test performed in December 1983.

Using conservative methods described in NUREG-0733, the staff independently analyzed the thermal performance of the spray pond. In its analysis the staff also used the long term (1949-1982) weather record for the airport near Scranton to determine the periods of most adverse meteorology with respect to spray pond cooling performance and water loss. It was then conservatively assumed that the peak ambient spray pond temperature would occur at the same time as the peak temperature due to plant heat rejection and a computer simulation was made to determine the combined peak spray pond temperature.

Since the meteorology record used was for the Scranton airport and not for the site, the staff compared the long term airport data with the limited onsite data to determine if there were any significant discrepancies between the two sites. This comparison showed that there are some biases in the two data sets. The average bias for the onsite data indicated that the spray pond temperature should be slightly higher than predicted from the Scranton airport data. Thus the staff increased the peak spray pond temperature to account for this bias.

Based on its analysis, the staff concludes that if a design basis accident were to occur when the average temperature in the spray pond was at 88°F, the pond has sufficient cooling capacity to provide plant cooling water at a design temperature of 95°F. On this basis, the staff finds increasing the spray pond operating temperature in Technical Specification 4.7.1.3 from 81°F to 88°F acceptable.

#### Environmental Consideration

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase

in the amounts, and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

#### Conclusion

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: **NOV 14 1984**

Issuance of Amendment No. 3 to Facility Operating Licence No NPF-22  
Susquehanna Steam Electric Station, Unit 2

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